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# Avian Habitat Utilization and Impact Assessment

Georgia Pacific Mill Site  
Fort Bragg, Mendocino County  
California

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**Prepared For:**

Georgia Pacific  
133 Peachtree Street, N.E, 9<sup>th</sup> Floor  
Atlanta, Georgia 30303  
Julie Raming  
(404) 652-4000

**Contact:**

Mike Josselyn  
josselyn@wra-ca.com

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A	List of avian species that may occur in the vicinity of the Study Area
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## 1.0 Introduction

California Coastal Commission Appeal No: A-1-FTB-05-053 states;

“To properly determine that the potential impacts of the proposed clean-up and excavation work at Glass Beaches 1-3 and Parcel 3 and 10 have been reduced to less than significant levels, the applicant must submit an avian habitat utilization evaluation addressing: (1) the various resident and migratory species that inhabit or utilize, or are likely to inhabit or utilize the affected coastal bluff and rocky intertidal areas; (2) the various resting, feeding, breeding, and nesting requirements and seasons of these species; (3) the relative susceptibility of the species engaging in these activities at the site to disturbance; (4) the transitional habitat needs of these species between the rocky intertidal areas and bluffs and the development; and (5) appropriate mitigation measures, such as conducting the subject work after the relevant nesting seasons have ended if a pre-construction surveys indicate the presence of these species.”

Section 30107.5 of the Coastal Act defines an environmentally sensitive area. as:

“Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.”

The two sensitive areas addressed in this report are the coastal bluff and the rocky intertidal zone. According to the California Coastal Commission's *California Coastal Resource Guide*, a coastal bluff is defined as follows:

“The precipitous cliffs, steep-walled bluffs, and rocky headlands that characterize much of California's coastline are evidence of the ongoing geologic processes that shaped the western margin of the North American continent. Unlike the Atlantic and Gulf coasts of North America, whose gently sloping seashores are the result of gradual submergence of the continent's edges, the sheer walls and elevated terraces of the California coast were created by abrupt faulting and uplift. Bluffs and sea cliffs are a testament to the erosive power of waves, winter rainstorms, and wind, while headlands remain where coastal rock has withstood weathering by these elements.”

In addition, it defines the rocky intertidal zone:

“Between the high and low tide marks lies a strip of shoreline that is regularly covered and uncovered by the advance and retreat of the tides. This meeting ground between land and sea is called the intertidal. The plants and animals inhabiting this region are hardy and adaptable, able to withstand periodic exposure to air and the force of the pounding surf. Intertidal communities occur on sandy beaches, in bays and estuaries, and on wharf pilings, but the communities of rocky shorelines are perhaps the most diverse and the most densely populated. Rock faces, crevices, undersides of rocks, and tidepools each support and array of species.”

A Wildlife Biologist from WRA, Inc. has made two field visits to the Study Area in order to

determine the biological resources present and the effect of the proposed work on these resources. In addition to these two areas mentioned in the CCC Appeal, this assessment also addresses the avian species that may utilize the upland areas adjacent to the coastal bluff (coastal terrace prairie and perennial grassland), the beaches and the freshwater aquatic habitat (freshwater pond, marsh and seep habitat) as they are adjacent to some of the proposed work areas and, as a result, may be affected by the proposed work. The proposed work areas are identified in the appropriate work plans developed by Acton Mickelson Environmental, Inc. (AME).

Table A of this document summarizes (1) avian species that may inhabit or utilize all of these areas and (2) the various resting, feeding, breeding and nesting requirements and seasons of these species. The relative susceptibility of the species engaging in these activities at the site to disturbance; the transitional habitat<sup>1</sup> needs of these species between the rocky intertidal areas and bluffs and the development; and appropriate mitigation measures, will be addressed below on a work project area basis. In addition, Table A also provides a range of months during which each species may be found in the Study Area and if the species may use the area for nesting. Table A is presented in three parts. Table A1 addresses special status species that may nest in the Study Area. Table A2 addresses special status species that may use the Study Area, but not for nesting purposes. Table A3 includes all other avian species that may be affected by work in or near the Study Area. Mitigation measures for activities allowed in each ESHA are discussed in the text.

## **2.0 Avian Species included in the Analysis**

Special status species include those wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These Acts afford protection to both listed and proposed species. In addition, California Department of Fish and Game (CDFG) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, and U.S. Fish and Wildlife Service (USFWS) Species of Concern are considered special status species. Although California and USFWS Species of Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal.

Special status species are of considerable interest as they may have special legal status, however, all avian species that could potentially be affected by the proposed project are addressed in this assessment, not just special status species. The status of each species is highlighted in Table A.

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<sup>1</sup>Transitional habitat is defined as a plant community whose species are adapted to the diverse and varying environmental conditions that occur along the boundary that separates aquatic and terrestrial areas but may also more generally refer to the boundary between two habitats or a buffer.

### 3.1 Glass Beach 1

#### *Susceptibility to Disturbance*

Glass Beach #1 (pictured) is located at the northwest corner of Parcel 1. It is bordered to the north by the public Glass Beach and Glass Beach Headlands park areas. As a result, this portion of the Glass beach areas is heavily used by the public and their dogs. A trail runs from the public part of Glass Beach, south along the Glass beach #1 bluff and to a small beach area. During the site visit this area was heavily trafficked by a number of people and their pet dogs. Because of this heavy use, it would be unlikely for avian species to nest in the cliffs and bluffs above the beach and intertidal areas. Species that use intertidal, bluff and upland habitats may be affected by work in this area and are listed in Table A.



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#### *Transitional Habitat Needs*

Because of the heavy, year-long public use of this area by people and their dogs and the resultant low potential for nesting birds, no transitional habitat needs or buffer are foreseen for this work area- pending the results of a pre-construction breeding bird survey.

#### *Mitigation Measures*

Though the potential for nesting birds is low due to the heavy public use, it is recommended that a breeding bird survey be done before the start of construction to insure no harm or harassment of avian species. If a nest is found, at least a fifty foot buffer should be established around the nest until all young have fledged. Table A should be referenced for each species' buffer needs. Avian survey protocol is discussed in section 4.1.

### 3.2 Glass Beach 2

#### *Susceptibility to Disturbance*

Glass Beach #2 (pictured) is located approximately 1200 feet south of Glass beach #1. There is not as much public disturbance as it is not bordered by publicly accessible areas. In addition, the bluffs are steeper and the sea stacks off shore are larger and more numerous, providing more potential nesting habitat for avian species. Species that use intertidal, bluff, beach and upland habitats may be affected by



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work in this area and are listed in Table A.

#### *Transitional Habitat Needs*

The transitional habitat needs or buffer for this area may vary depending on what time of year the work is to be done and what the results of the pre-construction breeding bird surveys are (see below).

#### *Mitigation Measures*

The potential for breeding birds to use the sea stacks off shore as well as the bluff areas for nesting are much higher than Glass Beach #1 due to the relative seclusion of this site. These areas should be surveyed for breeding birds prior to commencement of construction activities. In addition, there is suitable nesting habitat above the bluff in the grasses and ruderal vegetation for ground nesting birds such as California Horned Larks (*Eremophila alpestris*). This area should be surveyed prior to construction as well. If a nest is found, at least a fifty foot buffer should be established around the nest until all young have fledged. Table A should be referenced for each species' buffer needs. Avian survey protocol is discussed in section 4.1.

### **3.3 Glass Beach 3**

#### *Susceptibility to Disturbance*

Glass beach #3 (pictured) is located approximately 900 feet south of Glass Beach #2. This area is also relatively secluded compared to Glass beach #1 and has steep bluffs and a number of sea stacks close to shore. Species that use intertidal, bluff and upland habitats may be affected by work in this area and are listed in Table A.



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#### *Transitional Habitat Needs*

The transitional habitat needs or buffer for this area may vary depending on what time of year the work is to be done and what the results of the pre-construction breeding bird surveys are (see below).

#### *Mitigation Measures*

It is recommended that this area be treated in a similar fashion as Glass Beach #2. The relative seclusion and quality of bluff and sea stack habitat nearby increase the potential for breeding birds to frequent the site. In addition, there is some ruderal, grassland habitat on the actual terrace that may be attractive to ground nesting avian species. It is recommended that breeding bird surveys be conducted for all of these habitats prior to commencement of construction. If a nest is found, at least a fifty foot buffer should be established around the nest until all young have fledged. Table A should be referenced for each species' buffer needs. Avian survey protocol is discussed in section 4.1.

### 3.4 Parcel 3

#### *Susceptibility to Disturbance*

Parcel 3 (pictured) is a large parcel located to the east of Glass Beach 3. The geophysical anomalies in question are located on the western half of the parcel, near the bluffs and potential bird breeding areas to the south of Glass Beach 3. Removal of these anomalies will not require excavation of the entire area as in the Glass Beach sites as the anomalies will be removed individually. Heavy equipment will be used for this process however, and avian species that use intertidal, bluff, beach and upland habitats may be affected by work in this area and are listed in Table A.



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#### *Transitional Habitat Needs*

The transitional habitat needs or buffer for this area may vary depending on what time of year the work is to be done and what the results of the pre-construction breeding bird surveys are (see below).

#### *Mitigation Measures*

Though the excavation work being performed in Parcel three will be geophysical anomaly specific and none of the anomalies occur in the immediate bluff area, there is potential to disrupt and disturb avian species by the presence of heavy machinery and work crews. There is a small patch of ruderal vegetation and scrub that runs parallel to the bluff that may be attractive to ground nesting bird species. Additionally, there is a small beach area below the bluff that could possibly but not probably (due to its small size and disturbance) be attractive to beach breeding species such as plovers. These two areas in addition to the bluff should be surveyed prior to construction activities to determine the presence of breeding birds. If a nest is found, at least a fifty foot buffer should be established around the nest until all young have fledged. Table A should be referenced for each species' buffer needs. Avian survey protocol is discussed in section 4.1.

### 3.5 Parcel 10

#### *Susceptibility to Disturbance*

Parcel 10 (pictured) is located in the southwest portion of the property to the west of the air strip. This parcel, as in parcel 3, will not be excavated completely but rather, the excavations will be geophysical anomaly specific. Most of the anomalies are concentrated



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to the east of the small cove shown in the photo. No work is expected to be conducted on the actual bluff but work equipment and crew working near the bluff have the potential to disturb avian species that use intertidal, bluff and upland habitat. These species are listed in Table A.

### *Transitional Habitat Needs*

The transitional habitat needs or buffer for this area may vary depending on what time of year the work is to be done and what the results of the pre-construction breeding bird surveys are (see below).

### *Mitigation Measures*

As in Parcel 3, the work being done in Parcel 10 will be geophysical anomaly specific. A number of anomalies are within 100 feet of the bluff and the same precautions for breeding avian species should be undertaken. Breeding bird surveys should be done prior to commencement of construction activities. Both the bluff area and the grassland in parcel 10 should be surveyed to determine the presence of ground nesting and cliff nesting species. This Parcel is of particular interest because roosting cormorants (*Phalacrocorax* sp.) were seen during two of the site visits. Guano stains at one of the roosting areas can be seen on the middle of the bluff in the photo above. If a nest is found, at least a fifty foot buffer should be established around the nest until all young have fledged. Table A should be referenced for each species' buffer needs. Avian survey protocol is discussed in section 4.1.

## **3.6 Foundation Removal**

### *Susceptibility to Disturbance*

The foundation removal will mostly be concentrated around the former sawmill #1 area (pictured) with additional removal also occurring in the former mobile equipment shop area. Bluff nesting avian species are not as much of a concern as previous areas since most of the foundation removal is adjacent to the Fort Bragg Landing beach area and not coastal bluffs.

Though the beach area is relatively small there is the slight potential that beach nesting avian species such as plovers could utilize this area. There is dense shrub habitat in the form of pampas grass near the foundation area as well as dense areas of emergent vegetation in the mill pond area that may be attractive to nesting avian species. In addition, there are a few trees scattered along the north end of the beach area. Species that use intertidal, beach wetland and upland habitats may be affected by work in this area and are listed in Table A.



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### *Transitional Habitat Needs*

The transitional habitat needs or buffer for this area may vary depending on what time of year the work is to be done and what the results of the pre-construction breeding bird surveys are (see below).

### *Mitigation Measures*

Pre-construction breeding bird surveys should be conducted prior to the commencement of construction activities. Areas of special consideration not previously mentioned in this report include the trees at Fort Bragg Landing beach, the pampas grass and other shrub habitat in the former saw mill area and the emergent vegetation surrounding and within the mill pond. If a nest is found, at least a fifty foot buffer should be established around the nest until all young have fledged. Table A should be referenced for each species' buffer needs. Avian survey protocol is discussed in section 4.1.

## **4.0 Discussion**

The potential nesting habitats for avian species was the focus of this assessment as it is the most sensitive to human disturbance out of the four habitat requirements in question- breeding, feeding, resting and nesting. The nesting habitats available in the Study Area include bluff, grassland, shrubland, tree, beach and emergent wetland. The project footprint does not necessarily have to be overlapping a nest site in order to disturb it. Visual and acoustic disturbances from work being conducted can potentially harass avian species substantially outside the project area footprint. Therefore, breeding bird surveys should not merely focus on the proposed project footprint, but should encompass the area within roughly one hundred yards of the project footprint. For most avian species a fifty foot buffer would suffice, but this range would not adequately encompass the habitat needs of nesting raptors and other species such as the western snowy plover (*Charadrius alexandrinus nivosus*). For example, Northern Harriers (*Circus cyaneus*) are ground nesting raptors and Peregrine Falcons (*Falco peregrinus*) are cliff nesting raptors that would require a substantially larger buffer, approximately 300 feet, if nests were to be found.

If no nests are found in or near the work area, construction may commence. Because of the diversity of bird species that could be affected by the proposed project and subsequent large extent of the bird breeding seasons involved (the end of February through September) recommending one work window would be inadequate. The work window for this project can be more accurately discussed if it is broken down into three parts:

#### *Window #1*

Most avian species are expected to be nesting from March through July. During this time preconstruction surveys would be necessary as they have the highest chance of locating nesting species.

#### *Window #2*

From August through September most young are expected to have fledged, however, species with multiple broods still may be nesting. Preconstruction bird surveys would be

at the discretion of the qualified biologist and may be species specific.

#### *Window #3*

From October to February no avian species would be expected to nest in the Study Area and no preconstruction surveys would be necessary. Any harassment of avian species should be avoided if possible.

Any tree or shrub removal should take place outside of the bird breeding season or after a qualified biologist has surveyed the vegetation destined to be removed. In order to lessen the likelihood of avian species utilizing the shrubs and grasses in the upland portions of the Study Area for nesting, the vegetation may be removed or cropped down to a level low enough to dissuade nesting. This work should be done in the winter, outside of the bird breeding season, to ensure no harm or harassment of avian species.

#### **4.1 Avian Survey Protocol**

In addition to the potential breeding habitat in and near the project areas mentioned above, access roads to the work area and equipment staging areas should also be surveyed prior to construction activities to ensure no harassment to avian species. The following guidelines are recommended for surveying and monitoring avian species:

- An ornithologist or qualified biologist should be used for all surveys and make an effort to minimize disturbances to avian species while surveying.
- Binoculars (8X42 minimum recommended) or a spotting scope should be used for surveying.
- Construction areas, access roads and staging areas as well as a buffer region within 100 meters of these areas should all be surveyed within the two weeks before construction activity.
- All avian species should be recorded. Data should include behavior or activities and any disturbances or threats near the species and distance from each disturbance or threat. Reaction to disturbances should also be included.
- If a nesting species is located, the nest site should be recorded on a map. A qualified wildlife biologist should work in concert with the contractor to insure no harassment of the species. Either the biologist should be present during the work to maintain the appropriate buffer and monitor avian reaction to the work or an exclusion fence with interactive signage should be erected to insure no harassment from the public or work crews. The nest should be monitored as needed to determine when all the young have fledged and work within the buffer can resume.
- If the nest of a special status species is found, the appropriate buffer should be maintained and consultation with the appropriate agency (USFWS, CDFG or the Point Reyes Bird Observatory) may be necessary.
- Areas that have been surveyed, yet where no work has been done for an extended period of time, may require additional pre-construction surveys at the discretion of the biologist to be certain of no new nesting activity.
- A weekly report summarizing monitoring activities and observations should be maintained.

## **5.0 References**

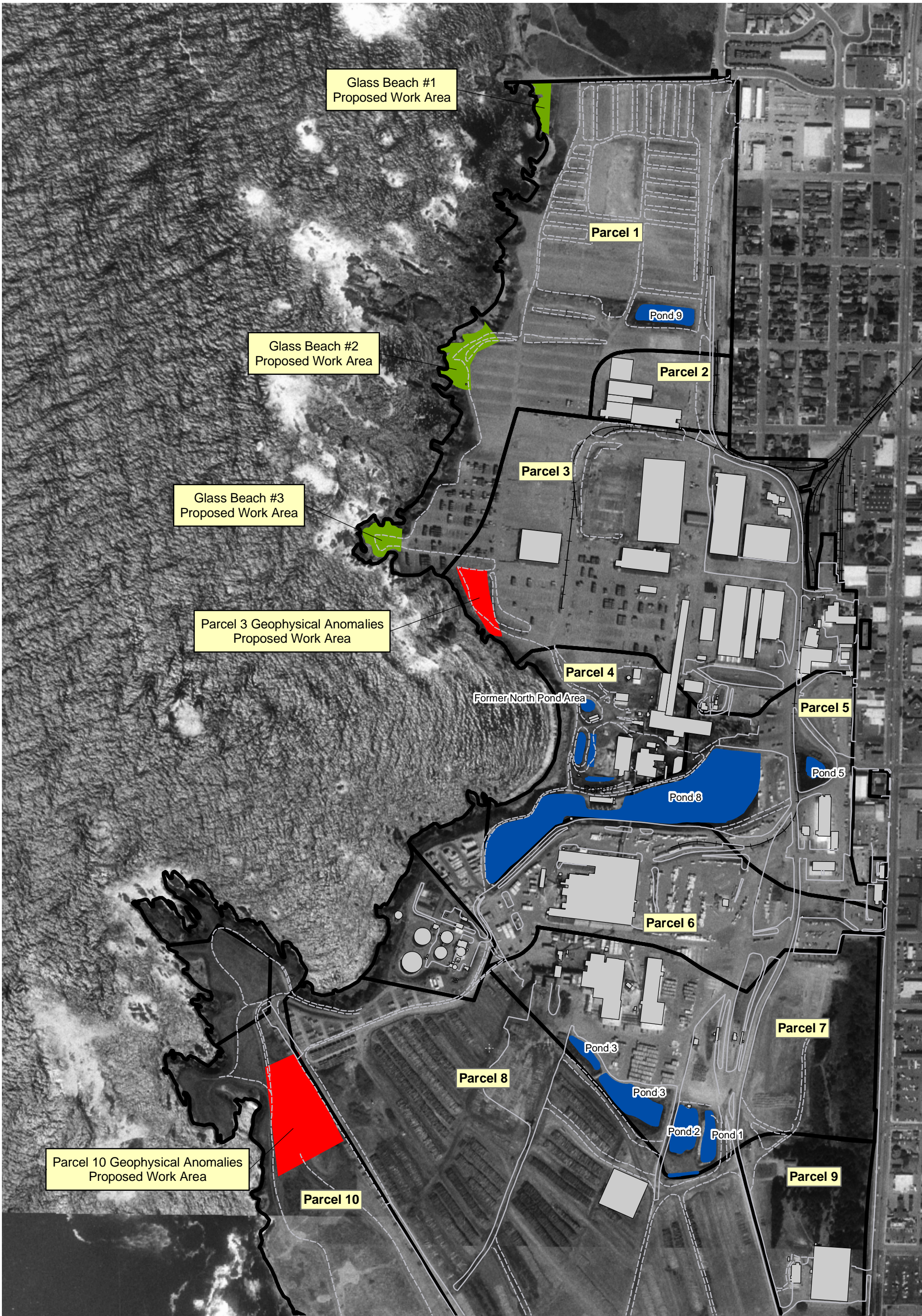
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- Legend
- Pond
  - Facility Structure
  - Parcel Boundary
  - Glass Beach Proposed Work Area
  - Geophysical Anomaly Proposed Work Area
  - Railroad Track
  - Unpaved
  - Pavement

Notes:  
1. All locations and dimensions are approximate.

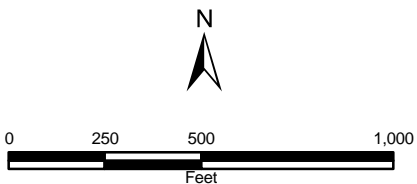


FIGURE 1  
SITE MAP

Georgia-Pacific California Wood Products Manufacturing Facility  
90 West Redwood Avenue, Fort Bragg, California

Project No.	Drawn By
16017.08	KJJ
	Prepared By
	Reviewed By
	MAA
	Scale
	As Noted

Acton Mickelson Environmental, Inc.  
Consulting Scientists, Engineers, and Geologists

5175 Hillsdale Circle #100  
El Dorado Hills, California 95762  
(916) 939-7550





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 PROPOSED WORK AREA BOUNDARY

FIGURE 2  
GLASS BEACH #1 PROPOSED WORK AREA  
OBLIQUE VIEW FROM WEST

Georgia-Pacific California Wood Products Manufacturing Facility  
90 West Redwood Avenue, Fort Bragg, California

Project No.	Drawn By
16017.08	KJJ
	Prepared By
	Reviewed By
	Scale
	None

Acton Mickelson Environmental, Inc.  
Consulting Scientists, Engineers, and Geologists

5175 Hillsdale Circle #100  
El Dorado Hills, California 95762  
(916) 939-7550





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 PROPOSED WORK AREA BOUNDARY

FIGURE 3  
GLASS BEACH #2 PROPOSED WORK AREA  
OBLIQUE VIEW FROM WEST

Georgia-Pacific California Wood Products Manufacturing Facility  
90 West Redwood Avenue, Fort Bragg, California

Project No.	Drawn By
16017.08	KJJ
	Prepared By
	Reviewed By
	Scale
	None

Acton Mickelson Environmental, Inc.  
Consulting Scientists, Engineers, and Geologists  
  
5175 Hillsdale Circle #100  
El Dorado Hills, California 95762  
(916) 939-7550





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 PROPOSED WORK AREA BOUNDARY

FIGURE 4  
GLASS BEACH #3 PROPOSED WORK AREA  
OBLIQUE VIEW FROM WEST

Georgia-Pacific California Wood Products Manufacturing Facility  
90 West Redwood Avenue, Fort Bragg, California

Project No.	Drawn By
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	Prepared By
	Reviewed By
	MAA
	Scale
	None

Acton Mickelson Environmental, Inc.  
Consulting Scientists, Engineers, and Geologists

5175 Hillsdale Circle #100  
El Dorado Hills, California 95762  
(916) 939-7550





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 PROPOSED WORK AREA BOUNDARY

FIGURE 5

PARCEL 3 GEOPHYSICAL ANOMALIES

PROPOSED WORK AREA

OBLIQUE VIEW FROM WEST

Georgia-Pacific California Wood Products Manufacturing Facility

90 West Redwood Avenue, Fort Bragg, California

Project No.	16017.08	Drawn By	KJJ
		Prepared By	
		Reviewed By	MAA
		Scale	None

Acton Mickelson Environmental, Inc.

Consulting Scientists, Engineers, and Geologists

5175 Hillsdale Circle #100

El Dorado Hills, California 95762

(916) 939-7550





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 PROPOSED WORK AREA BOUNDARY

FIGURE 6  
PARCEL 10 GEOPHYSICAL ANOMALIES  
PROPOSED WORK AREA  
OBLIQUE VIEW FROM WEST

Georgia-Pacific California Wood Products Manufacturing Facility  
90 West Redwood Avenue, Fort Bragg, California

Project No.	Drawn By
16017.08	KJJ
	Prepared By
	Reviewed By
	Scale
	None

Acton Mickelson Environmental, Inc.  
Consulting Scientists, Engineers, and Geologists

5175 Hillsdale Circle #100  
El Dorado Hills, California 95762  
(916) 939-7550



**Table A1: Special status avian species that have potential to nest in or adjacent to the proposed work areas.**

\*Season is when the bird is likely to be in the Study Area. If it has the potential to breed or nest during this time, "Breeding" is written below the months.

\*Aquatic refers to freshwater aquatic habitat-pond, marsh and seep. Tidal includes beach areas.

\*Buffer is only indicated for species with nesting or roosting potential in or near the Study Area.

Species/Status	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				Buffer*
			Tidal	Bluff	Upland	Aquatic	
California Brown Pelican <i>Pelecanus occidentalis californicus</i> <b>FE, SE</b>	Nest on rocky or low brushy slopes of undisturbed islands. Rest on water or inaccessible rocks. Forages mainly in early morning or late afternoon, or when tide is rising.	Resident Non-breeding	<b>X</b>	<b>X</b>			300ft
Double-crested Cormorant <i>Phalacrocorax auritus</i> <b>CSC</b>	Nests along coast on sequestered islets, usually on ground with sloping surface or in tall trees along lake margins. Rests in daytime and roosts overnight beside water on offshore rocks, islands, or steep cliffs. Feeds mainly on fish, crustaceans, and amphibians.	April - Aug Breeding	<b>X</b>	<b>X</b>			200ft
Snowy Egret <i>Egretta thula</i> <b>FSC</b>	Nests in trees, usually rather low to the ground. . Rest in dense emergent vegetation and in trees near water. Feeds in shallow water or along shores of wetlands or aquatic habitats.	late April - late Aug	<b>X</b>		<b>X</b>	<b>X</b>	200ft
Osprey <i>Pandion haliaetus</i> <b>CSC</b>	Nests along ocean shores, bays, freshwater lakes and larger streams in treetops. Rest in large trees, snags, and dead-topped tree in open forest habitat. Requires open, clear waters for foraging. Uses rivers, lakes, reservoirs, bays, estuaries, and surf zones.	March - Sept Breeding	<b>X</b>	<b>X</b>			300ft

Species/Status	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				Buffer*
			Tidal	Bluff	Upland	Aquatic	
White-tailed Kite <i>Elanus leucurus</i> <b>FSC</b>	Nest placed near top of dense oak, willow ,or other tree stand near open foraging area. Rests in trees with dense canopies. Forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands.	Feb - Oct Breeding			X		300ft
Bald Eagle <i>Haliaeetus leucocephalus</i> <b>FT, SE</b>	Nests in large, old-growth, or dominant live tree with open branchwork. Requires large bodies of water, or free-flowing rivers with abundant fish adjacent snags or other perches.	Feb - July Breeding	X				300ft
Northern Harrier <i>Circus cyaneus</i> <b>CSC</b>	Nests on ground in shrubby vegetation, usually at marsh edge. Mostly nests in emergent wetland or along rivers or lakes. Rests in tall grasses and forbs in wetland, or at wetland/field border. Makes low, quartering flights above open ground.	April - Sept Breeding			X	X	300ft
Sharp-shinned Hawk <i>Accipiter striatus</i> <b>CSC</b>	Usually nests and rests in dense, small tree stands of conifers, which are cool, moist, and well shaded. Often forages in openings at edges of woodland, hedgerow, brushy pastures, and shorelines, especially where migrating birds are found.	April - Aug Breeding			X		300ft
Coopers Hawk <i>Accipiter cooperii</i> <b>CSC</b>	Usually nests in deciduous riparian areas or second-growth conifer stands near streams. Rests in areas with dense tree stands or patchy woodlands. Hunts in broken woodland and habitat edges.	March - August Breeding			X		300ft
Northern Goshawk <i>Accipiter gentilis</i> <b>CSC</b>	Nests on north slopes, near water, in densest parts of stands, but close to openings. Rest in mature and old-growth stands of conifer and deciduous habitats. Hunts in wooded areas	April - mid June Breeding			X		300ft

Species/Status	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				Buffer*
			Tidal	Bluff	Upland	Aquatic	
American Peregrine Falcon <i>Falco peregrinus anatum</i> <b>SE</b>	Breeds near wetlands, lakes, rivers, or water on high cliffs, banks, dunes, mounds. Requires protected cliffs and ledges for cover. Feeds on a variety of birds, and some mammals, insects, and fish.	March - late Aug Breeding		X	X	X	300ft
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> <b>FT, CSC</b>	Nests and feeds on sandy or gravelly beaches along the coast, on estuarine salt ponds, and alkali lakes.	April - August Breeding	X				300ft
Marbled Murrelet <i>Brachyramphus marmoratus</i> <b>FT, SE</b>	Breed in old-growth redwood stands containing platform-like branches along the coast. Rest on surface of shallow coastal waters close to shore. Forages in summer close to the shore and during the winter further from the shore.	May - Sept Breeding	X				300ft
Vaux's Swift <i>Chaetura vauxi</i> <b>FSC, CSC</b>	Nests in redwood, douglas-fir, and other coniferous forest. Rest in large hollow trees, and snags. Forages high in the air over most terrain and habitats but prefers rivers/lakes.	May - Aug Breeding			X	X	100ft
Rufous Hummingbird <i>Selasphorus rufus</i> <b>FSC</b>	Nests in coniferous forests; nest variously placed in berry tangles, shrubs, and conifers. Rest in trees and shrubs in , lowland riparian, open woodlands, scrub, and chaparral. Eats nectar from many species of flowering plants.	April - July Breeding			X		100ft
Allen's Hummingbird <i>Selasphorus sasin</i> <b>FSC</b>	Breeds in sparse and open woodlands, coastal redwoods, and sparse to dense scrub habitats. Distribution highly dependent on abundance of nectar sources.	Feb - Aug Breeding			X		50ft



Species/Status	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				Buffer*
			Tidal	Bluff	Upland	Aquatic	
Olive-sided Flycatcher <i>Contopus cooperi</i> <b>FSC</b>	Nest and rest on open cup of grasses, mosses, lichens, pine needles; usually placed in a conifer. Forage over forest canopy or adjacent meadows, clearings, or shrub-covered slopes.	June - Aug Breeding			X		50ft
Horned Lark <i>Eremophila alpestris actia</i> <b>CSC</b>	Builds grass-lined nest on ground in the open. Rest in grasses, shrubs, forbs, rocks, and other surface irregularities provide cover. Walks along ground, searching for food	March - July Breeding			X		100ft
Bank Swallow <i>Riparia riparia</i> <b>FSC, ST</b>	Nests in riparian areas with vertical cliffs and bands with fine-textured or sandy soils in which to nest. Uses holes dug in cliffs and river banks. Feeds over open riparian areas, brushland, grassland, and cropland.	May - July Breeding		X	X		100ft
Loggerhead Shrike <i>Lanius ludovicianus</i> <b>FSC, CSC</b>	Nest well concealed above ground in densely-foliaged shrub or tree. Prefers open habitats with scattered shrubs, trees, pots, utility lines from which to forage for large insects.	May - Aug Breeding			X		50ft
Yellow Warbler <i>Dendroica petechia</i> <b>CSC</b>	Nests in riparian stands of willows, cottonwoods, aspens, sycamores, and alders. Also nests in montane shrubbery in open conifer forests. Rest and Forage in riparian deciduous habitats and shrubs.	April - Aug Breeding			X		50ft
Lark Sparrow <i>Chondestes grammacus</i> <b>FSC</b>	Nest usually built on ground in herbage shaded by a tussock or small shrub. Rest in scattered trees or shrubs. Takes insects and seeds from litter on ground, from herbaceous plants, and shrubs.	Resident April- August breeding			X		50ft

Species/Status	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				Buffer*
			Tidal	Bluff	Upland	Aquatic	
Grasshopper Sparrow <i>Ammodramus savannarum</i> <b>FSC</b>	Frequents dense tall, dry or well-drained grasslands, especially native grasslands with mixed grasses and forbs for foraging and nesting. Nests on ground at base of overhanging clumps of vegetation.	April - July Breeding			X		100ft

**Table A2: Special status avian species that have the potential to forage or rest in or adjacent to the proposed work areas.**

\**Season* is when the bird is likely to be in the Study Area. If it has the potential to breed or nest during this time, "Breeding" is written below the months.

\**Aquatic* refers to freshwater aquatic habitat-pond, marsh and seep. *Tidal* includes beach areas.

\**Buffer* is only indicated for species with nesting or roosting potential in or near the Study Area.

Species/Status	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				Buffer*
			Tidal	Bluff	Upland	Aquatic	
Common Loon <i>Gavia immer</i> <b>FSC, CSC</b>	Prefer to nest on small islets and protected sites on shore. Winter in estuarine and subtidal marine habitats along coast, San Francisco Bay.	Sept - May	X			X	
Aleutian Canada Goose <i>Branta canadensis leucoparidea</i> <b>FSC</b>	Migratory species that winters in the Central Valley. Winters at lakes and inland prairie habitats. Forages in pastures and cultivated fields. Loafs in lakes, reservoirs, and ponds.	Oct - April			X	X	
Harlequin Duck <i>Histrionicus histrionicus</i> <b>FSC, CSC</b>	Nests along shores of shallow, swift rivers with plentiful aquatic invertebrates. Nest often in a recess, sheltered overhead by stream bank, rocks, or woody debris. Rests along the coast, on water, or rocky shores. Along coast in winter, dives for food in turbulent rivers, most often dives for food.	Oct - April	X	X			
Long-billed Curlew <i>Numenius americanus</i> <b>FSC, CSC</b>	Breeds in northeastern California in wet meadow habitat. Breeds on grazed mixed-grass and shortgrass prairies. Rests in coastal estuaries, requires high salt marsh, pastures, salt ponds. Uses long bill to probe deep into substrate, or to grab prey from mud surface, while at times wading in very deep water.	Sept-April			X	X	

Xantu's Murrelet <i>Synthliborampus hypoleucus</i> <b>FSC, CSC</b>	Pelagic species that breeds on shore in rock crevices or under bushes. Rests on water or in cliff crevices. Usually forages in pelagic waters adjacent to island colonies	March - Aug	<b>X</b>				
Rhinoceros Auklet <i>Cerorhinca monocerata</i> <b>CSC</b>	Nest in a burrow on undisturbed forested or unforested islands. Rests on pelagic marine waters, usually alone. Forages by diving and pursuing prey underwater.	Oct -April	<b>X</b>				



**Table A3: Non-special status avian species that have the potential to feed, breed, rest or nest in or adjacent to the proposed work areas.**

\*Season is when the bird is likely to be in the Study Area. If it has the potential to breed or nest during this time, "Breeding" is written below the months.

\*Aquatic refers to freshwater aquatic habitat-pond, marsh and seep. Tidal includes beach areas.

\*Buffer is only indicated for species with nesting or roosting potential in or near the Study Area.

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Red Throated Loon <i>Gavia stellata</i>	Nest and breeding in subarctic and arctic regions, no records in California. Rest mostly on water, rarely will come ashore. During migration will dive for food in shallow or deep water, often close to surf.	Oct - April	X				
Pacific Loon <i>Gavia arctica</i>	Nest and breeding in subarctic and arctic regions, no records in California. Rest on water, sometimes comes ashore. Feeds in deep water on small fish, crustaceans, and aquatic plants.	Oct - Dec; April - May	X				
Pied-billed Grebe <i>Podilymbus podiceps</i>	Nest in emergent vegetation near open water. Fairly common in estuarine and saline emergent wetland, but rare in marine habitats. May occasionally rest ashore. Dive for food in aquatic and wetland habitats.	March - September Breeding	X			X	50ft
Horned Grebe <i>Podiceps auritus</i>	Nest on ponds, marshes with open water. Breeding does not occur in California. Rest on water. Feeds on small fish crustaceans, and insects.	Oct - April	X			X	
Red-necked Grebe <i>Podiceps grisegena</i>	Nest within or on the edge of emergent vegetation bordering shallow inland lakes. Rests on water. For breeding, requires some emergent vegetation bordering a shallow lake.	Oct - April	X			X	

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Eared Grebe <i>Podiceps nigricollis</i>	Nest and breed in platforms built in emergent vegetation. Rest on water, does not come ashore. Primarily dives for aquatic food.	Sept - May	X			X	
Western Grebe <i>Aechmophorus occidentalis</i>	Nest and breed in large open waters with emergent vegetation such as tules or cattails. Rests on water. Feeds in water by diving for fish, insects, and invertebrates.	Oct - May	X			X	
Clark's Grebe <i>Aechmophorus clarkii</i>	Nest and breed in large open waters with emergent vegetation such as tules or cattails. Rests on water. Feeds in water by diving for fish, insects, and invertebrates.	Oct - May	X			X	
Brandt's Cormorant <i>Phalacrocorax penicillatus</i>	Nests on flat, or moderately sloping, ground of offshore islets, or on inaccessible ledges of mainland cliffs. Rests communally on rocky headlands and islets, and sand beaches. Feeds mostly small saltwater fishes, dives in shallow or deep water.	March - Aug Breeding	X	X			200ft
Pelagic Cormorant <i>Phalacrocorax pelagicus</i>	Nesting on precipitous, rocky cliffs of islands or mainland. Rests and roosts on steep rocky cliffs and offshore rocks. Feed mainly on small fish. Dives from water surface and pursues prey near rocky shores.	April - Aug Breeding	X	X			200ft
Great Blue Heron <i>Ardea herodias</i>	Prefers nesting in secluded groves of tall trees near shallow-water feeding areas. Rests in secluded tall trees and perches on kelp beds offshore. Feeds in shallow water or less commonly in open fields.	Feb - September Breeding	X	X	X	X	300ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Great Egret <i>Casmerodius albus</i>	Requires groves of trees suitable for nesting and roosting, relatively isolated from human activities. Rests communally in trees. Feeds in shallow water and along shores of estuaries, lakes, ditches, and slow-moving streams.	Mar - July Breeding	X	X	X	X	300ft
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	Nest in dense-foliaged trees, dense fresh or brackish emergent wetlands, usually near aquatic or emergent feeding areas. Rests in dense foliage of trees, and on piers and pilings. Hunts mostly in shallow water.	Feb - July Breeding	X			X	300ft
Wood Duck <i>Aix sponsa</i>	Cavity nester. Inhabits slow moving lacustrine habitats. Primarily herbivorous.	April - August				X	50ft
Greater Scaup <i>Aythya marila</i>	Nest in Alaska on marshy, low tundra, adjacent to ponds. May retreat to sea in response to human disturbance. Feeds by diving to bottom in water up to 7m deep.	Oct - March			X	X	
Lesser Scaup <i>Aythya affinis</i>	Nest is built near a pond or lake, usually on dry land in a the shelter of dense herbaceous vegetation, often on an island. Rests on open water far from shore, but occasionally rests on shores or mudflats. Dives for food, in water up to 12 m deep.	Oct - April			X	X	
Oldsquaw <i>Clangula hyemalis</i>	Nest along the arctic coast and inland, in tundra and tundra like habitats near water. Feed primarily by diving for small crustaceans, mollusks, and small fish. In California favors rough water by the rocky coasts or fairly deep but calmer bays or coves.	Oct - April	X				

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Black Scoter <i>Melanitta nigra</i>	Nest is concealed in low vegetation, often on a hummock, usually near a pond or lake, in tundra or the northern forest zone. Rests on open water near shore. Often feeds in groups, diving for food on bottom. Feeds in smooth or rough water.	Oct - April	X				
Surf Scoter <i>Melanitta perspicillata</i>	Nests on dry land near quiet or slow moving water. Nest usually concealed by brush or trees, in the forest zone of Canada and Alaska. Rest in flocks on open water beyond the surf on quieter waters of large bays. Dives and takes food from bottom, usually just beyond the breakers.	Oct - April	X				
White-winged Scoter <i>Malanitta fusca</i>	Nest in Canada and Alaska usually well hidden in dense low herbs or brush, near ponds, lakes or sluggish streams. Rests on sheltered waters of bays, and leeward side of islands. Dives and takes food from bottom, preferring shallow water in sheltered waters of bays	Oct - April	X				
Common Goldeneye <i>Bucephala clangula</i>	Nest in an open top cavity in a tree usually near a lake, pond, or quiet shallow river or stream. Rests in large flocks on ope water well offshore. Dives and takes food from bottom.	Nov - March	X			X	
Bufflehead <i>Bucephala albeola</i>	Nest in tree cavities, usually near a small lake or pond bordered by open forest. Rest on the water often well offshore. Dives for food, often over tidal flats.	Oct - April				X	
Common Merganser <i>Mergus merganser</i>	Nests in riparian areas. Forages in clear water. Feeds on fish.	Resident Breeding March-Sept	X			X	50ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Red-breasted Merganser <i>Mergus serrator</i>	Nest in southern tundra, and lakes of boreal forests. Uses marshes, rocky inlets, vegetated islands in large lakes. Dives in open water, and near underwater stumps, rocks, and logs.	Oct - April	X			X	
Ruddy Duck <i>Oxyura jamaicensis</i>	Nest built above shallow water amidst dense, tall fresh emergent vegetation, near open water of lake, pond, or marsh. Rests on water typically on large, open expanses. Dives to bottom in deep water and typically on large waters.	April - Oct Breeding				X	50ft
Mallard <i>Anas platyrhynchos</i>	Nests on fairly dry sites in tall dense herbaceous, vegetation or low shrubbery. Rests in dense emergent wetland vegetation. Feed on shallow water, gleans insects and seeds in fields and along shores.	March - July Breeding			X	X	50ft
American Wigeon <i>Anas americana</i>	Nests on ground on upland sites, near lakes or emergent wetland with extensive open water, and much submerged vegetation. Rest well offshore on extensive open water. Forges in shallow water by gleaning surface and subsurface waters. More than other dabblers, it spends much time grazing in fields near water	Sept-April				X	
Cinnamon Teal <i>Anas cyanoptera</i>	Nests in freshwater habitats in dense emergent vegetation or dense grass. Rests on small ponds. Feed in shallow water.	August- March				X	
Green-winged Teal <i>Anas crecca</i>	Nests on upland sites, usually within 60 meters of water. Rests on water or shores of emergent wetlands, ponds, or quiet streams. Forges in very shallow emergent wetlands, mud flats temporarily flooded fields, ditches, and dry upland fields near water.	August- March			X	X	

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Turkey Vulture <i>Cathartes aura</i>	Nest and rest in extensive open areas with protected nest and rest sites provided by large trees, snags, thickets, shrubs, and rock outcrops. Soars over roads, fields, open forest for carrion.	March - July Breeding		X	X		
Red-shouldered Hawk <i>Buteo lineatus</i>	Nest and rests in dense riparian habitats. Forages mostly along edges of wet meadows, swamps, and emergent wetlands.	Feb - July Breeding			X	X	300ft
Red-tailed Hawk <i>Buteo jamaicensis</i>	Nest in large trees near openings, in older, mature forests, especially riparian deciduous habitats. Rests in trees, sometimes in dense conifer stands. Feeds in grassland.	March - July Breeding		X	X	X	300ft
Rough-legged Hawk <i>Buteo lagopus</i>	Nests on cliffs, river bluffs, and rock outcrops in tundra regions of Canada and Alaska. Rests by riparian habitat and by isolated trees and shrubs. Hunts in wet meadows, marshes, swamps, and riparian edges.	May - June		X	X		
American Kestrel <i>Falco sparverius</i>	Nest and rest in cavities in trees, snags, rock crevices, cliffs, banks, and buildings. Forages in open habitats	April - Aug Breeding			X		100ft
Merlin <i>Falco columbarius</i>	Nest in Alaska and Canada. In a tree, usually a conifer. Rest in dense tree stands close to bodies of water. Frequents shorelines in winter and catches shorebirds.	May - June			X	X	
California Quail <i>Callipepla californica</i>	Nest in small depression in ground, lines with grasses and forbs; nest hidden in herbage among shrub. Rest in brush and trees. Forages on ground ad low vegetation.	March - Aug Breeding			X		50ft



Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
American Coot <i>Fulica americana</i>	Nests over water in dense, emergent wetlands, preferably among burushes or cattails. Often nests in rice croplands. Rests to open water, or into dense wetland vegetation. Forages under water on the foliage and roots of submerged aquatic plants such as filamentous algae, and pondweeds.	April - Sept Breeding				X	50ft
Black-bellied Plover <i>Pluvialis squatarola</i>	Nest in arctic regions on moist or dry tundra. Nest often placed on a slightly raised area or ridge. Rests in estuarine habitats, requires undisturbed areas above high tide waters.	July-May	X			X	
Killdeer <i>Charadrius vociferus</i>	Nest in natural and human-made habitats with low or sparse vegetation. These include pastures, gravel river banks, sparsely-vegetated salt flats, and salt pond dikes. Forages in open fields, muddy shores, and on lawns.	late Feb - Aug Breeding	X		X	X	50ft
Black Oystercatcher <i>Haematopus bachmani</i>	Nests on slight depressions on rock ledges. Breeds May-late September, on undisturbed rocky, open ocean shores. Rest on cliffs, rock outcrops, and offshore rocky inlets. Feed on undisturbed, and rocky coastlines. Depends on tidal cycle and ocean swell conditions.	May - Sept Breeding	X	X			100ft
Greater Yellowlegs <i>Tringa melanoleuca</i>	Nest in Alaska and Canada, primarily in muskeg gores, but also in subalpine scrub and subarctic tundra. Rest in estuarine habitats, needs undisturbed areas above high tide waters. Forages in shallow water.	Spring and Fall	X			X	
Willet <i>Catoptrophorus semipalmatus</i>	Nests in fresh emergent wetlands, and wet meadows, usually close to open water such as ponds or lakes. Rests and forages in estuarine habitats.	August- April	X		X	X	

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Wandering Tattler <i>Heteroscelus incanus</i>	Nests is restricted to gravel bars along mountain streams and ponds in the alpine zone of Alaska and Canada. Rest in undisturbed rocks or jetties. During the winter, forage by probing among the kelp and rocks of outer coast marine habitats.	Spring and Fall	X				
Spotted Sandpiper <i>Actitis macularia</i>	Nest in a depression in the ground. Rest in rocky, gravelly, and sandy shore. Also found resting shores of rivers, lakes, and ponds during the breeding season and coastal shores during the non-breeding season. Captures some insects on the wing, and also wades in water to forage	April - Aug Breeding	X			X	50ft
Whimbrel <i>Numenius phaeopus</i>	Nests in arctic regions in open areas on moist hummocky tundra amid grasses, cotton-grass, and low heath. Rests in undisturbed areas above high tide. Feeds by probing into the substrate or by picking prey form the surface.	Spring and Fall	X				
Ruddy Turnstone <i>Arenaria interpres</i>	Nest in arctic regions on a variety of tundra substrates, ranging from marsh flats l the lowlands to well-drained hummocky slopes. Rest in undisturbed areas above tidal waters. Feeds by probing , jabbing, overturning objects such as stones to catch the invertebrates underneath.	Spring and Fall	X				
Black Turnstone <i>Arenaria melanocephala</i>	Nests along the west coast of Alaska on wet, grassy tundra, near pond edges or on small islets. Requires undisturbed areas above tidal water for resting. Feeds by probing l the substrate, and by using the bill to tip over small rocks, kelp, and other objects to obtain prey underneath.	Spring and Fall	X				

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Surfbird <i>Aphriza virgata</i>	Nests on alpine tundra above timberline, generally above 1220m, near talus slopes. Requires undisturbed rocks, jetties, or other promontories for resting during the high tide. Feeds close to the water's edge on rocks, or stony beaches, by probing into small edge on rocks.	Spring and Fall	X				
Sanderling <i>Calidris alba</i>	Nests in tundra at high latitudes. Rests in marine habitats, requires high ground. Typical foraging habitats are wash zones on sandy beaches. Follows retreating waves, probing sand for small invertebrates.	May - Aug	X				
Western Sandpiper <i>Calidris mauri</i>	Nests on elevated, drier islands with tundra surrounded by ponds and marshes in Alaska. Rests in dense flocks along salt ponds, in diked wetlands, or wet fields. Feeds in flocks by probing in the soft mud of tidal marine mudflats, estuaries, river banks, lake shores, and wet fields.	Winter, Spring and Fall	X		X	X	
Least Sandpiper <i>Calidris minutilla</i>	Nest in Canada and Alaska in sedge, grass, and mossy bogs. Rests on barren levees, dikes, or islands at high tide. Feeds by searching, pecking, and probing in soft mud for invertebrates. Prefers to feed along narrow channels, in mud holes, or along the edge of a marsh.	Winter, Spring and Fall	X			X	
Dunlin <i>Calidris alpina</i>	Nests in relatively well-drained or upland tundra, rarely in lowland marshes. Rests above high tide in estuarine habitats. Feeds by deep or shallow probing, and by surface pecking.	July-May	X				

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Long-billed Dowitcher <i>Limnodromus scolopaceus</i>	Nests on moist, low tundra close to lakes and marshes. Rests in estuarine habitats above high tide. Forages on soft mud substrates by probing deeply and rapidly.	July-May	X				
Mew Gull <i>Larus canus</i>	Nests are built on sea cliffs, sand beaches, wet tundra, and gravel bars of interior rivers. Rests on bayside mudflats, sandy beaches, and on calm waters. Forages in coastal areas, scavenges at harbors, searches mudflats, sandy or rocky areas. Inland feeds on lakes, emergent wetlands, and croplands.	September -May	X	X	X	X	
Ring-billed Gull <i>Larus delawarensis</i>	Nests are placed on the ground in the open, or partially concealed by rocks and boulders, around the margins of lakes, or on islands in lakes. Rests on levees, dikes, or small island near feeding areas. Forages in croplands, garbage dumps, and wetlands.	April - Aug Breeding	X	X	X	X	50ft
California Gull <i>Larus californicus</i>	Nests on islands, alkali or freshwater lakes and salt ponds in California. Rests and feeds along shorelines, landfills, pastures, and on islands.	April - Aug Breeding	X	X	X	X	50ft
Herring Gull <i>Larus argentatus</i>	Nests along seacoasts, inland lakes, and rivers. Rests in rocky areas, mudflats, sandy beaches, open water, piers, and buildings. Forages for small fishes near the water surface.	Oct - April	X	X	X	X	
Thayer's Gull <i>Larus thayeri</i>	Nests in colonies on cliffs. Rest on open ground at dumps, bays, and sandy beaches. Forage for surface fishes, waste from sewage outlets, and marine invertebrates.	April - Sept Breeding	X	X	X	X	50ft



Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Western Gull <i>Larus occidentalis</i>	Nests in a wide variety of habitats, including coastal rocks or islands, steep mainland cliffs, and occasionally human-made structures such as salt ponds, dikes, or bridges. Rests on offshore rocks, islands, or remote beaches. Forages over open water using aerial dives.	April - Aug Breeding	X	X	X	X	50ft
Glaucus-winged Gull <i>Larus glaucescens</i>	Nest on offshore islands, on rock ledges, sand, or soil substrates with tall grasses. Rests on sandy beaches, mudflats, intertidal rocks, and coastal buildings. Forages on outer coasts for marine invertebrates.	Oct - April	X	X			
Caspian Tern <i>Sterna caspia</i>	Nests in dense colonies on islands, levees, or shores. Rests on mudflats, boardwalks, lake shore, or pilings. Feeds over the open ocean, near shore.	Sept - April	X				
Common Tern <i>Sterna hirundo</i>	Nest along the coast or near large interior lakes on beaches, sand dunes, islands in freshwater, and coastal marshes. Res and forest on open water, beaches, bayside pilings, and tide flats.	Oct - April	X			X	
Common Murre <i>Uria aalge</i>	Nest on cliff ledges of rocky islands and seacoast. Rest in large numbers on water near breeding colony. Typically forages up to 15 km from the breeding colony.	April - Aug Breeding	X				50ft
Pigeon Guillemot <i>Cephus columba</i>	Nests in cliff crevices and talus slopes, or occasionally in burrows. Also uses man-made structures such as pipes, culverts, or crevices in wharves. Rest on seacliff ledges, or on the surface of coastal water. Forages on the water near coast or island shores.	April - Aug Breeding	X	X			50ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Cassin's Auklet <i>Ptychoramphus aleuticus</i>	Nests in large, dense colonies on undisturbed islands. Rest in pelagic waters. Are found in areas where krill crustaceans are present.	March - Aug	X				
Tufted Puffin <i>Fratercula cirrhata</i>	Nests in burrows on island cliffs or on grassy island slopes. Rests on rocky outcroppings on islands or on the ocean. Forages by diving and pursuing prey.	April - Aug Breeding	X				50ft
Mourning Dove <i>Zenaida macroura</i>	Nests in conifers and deciduous trees. Rest by trees, in shrubs, woodland, and forest stands. Obtains food from ground by pecking.	Jan - Sept Breeding		X	X		50ft
Barn Owl <i>Tyto alba</i>	Nest on ledges, crevices, or other sheltered areas of cliff or human-made structures. Rests in dense foliage of trees and shrubs, buildings, and cliffs. Hunts in open fields, wetlands, and grasslands.	Jan - Nov Breeding		X	X		50ft
Western Screech Owl <i>Otus kennicottii</i>	Nests in abandoned woodpecker hole, or other cavity in snag hollow tree, log, or stumps. Rest in woodpecker hole or other cavity in snag or tree, under moderate canopy. Feeds in open areas.	Feb - June Breeding			X		200ft
Great-horned Owl <i>Bubo virginianus</i>	Nests in abandoned hawk, crow, raven, or squirrel nest, in cave or crevice, on cliff ledge. Rests in trees with dense foliage. Forages in meadows and woodland or forest openings, or along edges.	Jan - June Breeding		X	X		200ft
Northern Pygmy Owl <i>Glaucidium gnoma</i>	Nest in abandoned woodpecker hole, or natural cavity. Rest in sparse to intermediate canopy cover. Eats mice, chipmunks, other small mammals, and small birds.	April - Aug Breeding			X		200ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Short-eared Owl <i>Asio flammeus</i>	Found in open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting. Feeds primarily on voles and other small mammals.	Sept - April			X		
Northern Saw Whet Owl <i>Aegolius acadicus</i>	Nests and rests in trees and snag cavities, in broken forest habitats. Eat mostly woodland mice and other small mammals.	March - Aug Breeding			X		200ft
Common Nighthawk <i>Chordeiles minor</i>	Nest on bare ground in rocky or gravelly ground, burns, and gravel roofs. Rest in trees. Preferred foraging habitats include wet meadow, emergent wetland, lacustrine, and riverine habitats, and shrub-covered valleys and plains.	March - July Breeding			X	X	50ft
Anna's Hummingbird <i>Calyte anna</i>	Nest in shrubs, trees, or vines. Rest in trees and shrubs in woodland and brush habitats. Forage on nectar from many herbaceous and woody flowering plants.	Dec - Aug Breeding			X		50ft
Belted Kingfisher <i>Ceryle alcyon</i>	Usually excavates a nest burrow in a steep bank of sandy, or friable, soil. Rest on dead branches or live trees near water. Hunts by diving into water from a perch.	April - Aug Breeding	X	X	X	X	50ft
Northern Flicker <i>Colaptes auratus</i>	Nest cavity excavated in soft wood of snag. Rest in trees, shrubs in riparian deciduous areas and mature, open stands with snags. Forages in open forest areas, on ground, and in shrubs.	April - July Breeding			X		50ft
Pacific-sloped Flycatcher <i>Empidonax difficilis</i>	Nest often built near water in crotch of tree, on cliff ledge, in old building, or on other human-made structures. Mostly eat flying insects.	May - Aug Breeding			X		50ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Black Phoebe <i>Sayornis nigricans</i>	Nest built of mud and plant matter near or over water on cliff face, on wall of old building, under bridge, sheltered locations near water. Rest in trees and shrubs and other riparian vegetation. Mostly feed on insects from grassy fields or open water	March - Aug Breeding		X	X	X	50ft
Say's Phoebe <i>Sayornis saya</i>	Nest on rocky shelf, undercut bank, erosion hole in wash or cliff, eaves of building, or ledge on bridge. Rest in open terrain. Hawks flying insects from low, exposed perches, or hovers over ground or water, picking insects from surface.	March - July Breeding		X	X	X	50ft
Tree Swallow <i>Tachycineta bicolor</i>	Nests in old woodpecker hole, on cliff or bank, or other man-made structures usually near water. Rest in forest and woodland near water. Feeds on small seeds and berries, and insects.	April - Aug Breeding			X		50ft
Violet-green Swallow <i>Tachycineta thalassina</i>	Nest in old woodpecker hole in tree or snag in forests and woodlands close to water. Rest in trees and snags in open woodlands and forest. Forages over fields, lakes, and streams, and over forest and woodlands.	April - Aug Breeding			X	X	50ft
Cliff Swallow <i>Hirundo pyrrhonota</i>	Makes nest of mud pellets; often attached to human-made structure such as eaves of house, barn, bridge, or sheltered vertical surface. Rest and feeds in meadow, grasslands, shrublands, pastures, croplands near water.	April - Aug Breeding		X	X	X	50ft
Barn Swallow <i>Hirundo rustica</i>	Makes nest of mud pellets, grasses, and feathers. Mostly nests on human-made structures. Rest in open habitats such as cropland, grassland, and open brushy areas. Hunts over grasslands or open habitats.	April - Aug Breeding			X		50ft



Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Scrub Jay <i>Aphelocoma coerulescens</i>	Nest in dense foliage in a tree or shrub near water. Rest and forages in trees and shrubs in arid woodlands and shrublands..	March - Aug Breeding		X	X	X	50ft
American Crow <i>Corvus brachyrhynchos</i>	Nest is a large stick platform with an inner cup lined with mud and fine vegetation. Rests and forages in large trees and shrubs in woodlands, groves, orchards.	March - July Breeding	X	X	X	X	50ft
Common Raven <i>Corvus corax</i>	Nest and rest on cliff or bluff, tall tree or human-made structures. Eats carrion, small vertebrates, bird eggs, insects, seeds, nuts, and berries.	Feb - July Breeding	X	X	X	X	50ft
Chestnut-backed Chickadee <i>Parus rufescens</i>	Builds nest of moss with cup of fur, feathers, plant fiber; usually in old woodpecker hole or cavity in de decaying wood. Rest in trees and shrubs in humid forests of the coast and mixed forests. Feeds mostly in middle and upper canopy levels.	March - July Breeding			X		50ft
Bewick's Wren <i>Thryomanes bewickii</i>	Nests in cavity in ground, snag, rock, or man-made structures. Rest in dense shrubs, thickets, slash piles, fallen trees. Mostly forages on lower limbs and branches of small trees and shrubs, stems of large herbaceous plants.	Feb - Aug Breeding			X	X	50ft
House Wren <i>Troglodytes aedon</i>	Nests in virtually any cavity or crevice; common in a woodpecker hole in a tree or snag. Rest in deciduous tickets, especially in riparian habitats, low trees and shrubs, and chaparral. Probes foliage and litter within deciduous thickets, low trees, or chaparral.	April - Aug Breeding			X	X	50ft
Winter Wren <i>Troglodytes troglodytes</i>	Nest, rest, and forage in natural recess or cavity or under log, stump, or root tangle above ground in cavity in tree.	March - Aug Breeding			X	X	50ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Marsh Wren <i>Cistothorus palustris</i>	Nest and rest in cattail, bulrush, or sedge in emergent wetland habitat. Gleans from emergent stems and foliage, surface of water, ground, and litter.	March - Aug Breeding			X	X	50ft
Ruby-crowned Kinglet <i>Regulus calendula</i>	Nest attached to conifer twigs. Nest near tip of branch far above ground. Rest and forage in coniferous forest habitat.	May - Aug Breeding			X		50ft
Western Bluebird <i>Sialia mexicana</i>	Nest in old woodpecker hole in snag, tree, or stump. Rest in trees and shrubs. Flies out from low perch to capture prey on ground or herbage.	April - July Breeding			X		50ft
Swainson's Thrush <i>Catharus ustulatus</i>	Nest is an open cup of fine twigs. Usually placed in crotch of a willow, alder, or riparian habitat. Nest in riparian habitat with dense understory.	April - Aug Breeding			X	X	50ft
Hermit Thrush <i>Catharus guttatus</i>	Nest is an open cup above ground, usually placed in a well-shaded small tree near water. Rest and forages by stands of trees with mostly closed canopy and dense shrub understory.	May - Aug Breeding			X	X	50ft
American Robin <i>Turdus migratorius</i>	Nest and rest in moist, open, wooded areas, with herbaceous understory or nearby clearings for foraging	April - Aug Breeding			X	X	50ft
Varied Thrush <i>Ixoreus naevius</i>	Nest in a small or medium tree in dense and mature, humid coniferous forest. Rest and forages in dense, mature coniferous forests with damp, shaded floors.	April - Aug Breeding			X		50ft
Wrentit <i>Chamaea fasciata</i>	Nest concealed in a dense stand of shrubs. Rest in chaparral, coastal scrub, and other shrub that provides cover. Gleans from foliage, twigs, and bark of shrub.	March - Sept Breeding			X		50ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
American Pipit <i>Anthus rubescens</i>	Nest in tundra, alpine, or alpine dwarf-shrub. Rest on rocks, tussock, or piece of wood. Forages in open, often moist habitats where vegetation is low or absent.	Sept-May			X		
Cedar Waxwing <i>Bombycilla cedrorum</i>	Nest in fork or on horizontal branch, or in a shrub. Rest and forages in trees and large shrubs.	Sept - May			X		
Hutton's Vireo <i>Vireo huttoni</i>	Builds a cup nest suspended by rim from forks of a twig, usually in live oak, but also in bay, pine, willow, large ceanothus. Rest and forages in trees and shrubs, particularly in live oak woodland, riparian, and oak-conifer woodland, coastal closed-cone pine cypress, and chaparral habitats	Feb - May Breeding			X	X	50ft
Warbling Vireo <i>Vireo gilvus</i>	Nest in riparian habitats, but may be more attracted to the tree than to moisture. Rest and forages in deciduous trees, also shrubs and conifers.	April - Aug Breeding			X	X	50ft
Orange-crowned Warbler <i>Vermivora celata</i>	Nest and rest in dense, brushy stages of woodlands, forests, and riparian habitats. Forage above ground in shrubs and small trees.	April - July Breeding			X		50ft
Yellow-rumped Warbler <i>Dendroica coronata</i>	Nest in a well concealed, open cup, about ground in a conifer, occasionally in deciduous tree or shrub. Rest and forage in trees, shrubs, and ground layer in middle and high elevation.	May - July Breeding			X		50ft
Townsend's Warbler <i>Dendroica townsendi</i>	Nests 3 meters or more from the ground in a conifer. Rest and forages in moist oak woodlands, and conifer forest habitat.	Sept-April			X		

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Hermit Warbler <i>Dendroica occidentalis</i>	Frequents mature stands of conifers with open to dense canopy for breeding and resting. Forage in middle to upper canopy.	April - June Breeding			X		50ft
Macgilvray's Warbler <i>Oporornis tolmiei</i>	Nest above ground in a shrub in a moist thicket; sometimes in ground herbage. Rest in willow, alder, and other dense shrubs in riparian areas. Forages low in shrubs or on ground in dense thickets.	May - July Breeding			X		50ft
Common Yellowthroat <i>Geothlypis trichas</i>	Nest usually placed on or within 8 cm of ground. May be over water, in emergent aquatic vegetation, dense shrubs, or other dense growth. Rest and forage in wetland herbage and shrubs.	April - July Breeding			X	X	50ft
Wilson's Warbler <i>Wilsonia pusilla</i>	Nest near water or wet meadow, usually on ground under dense shrub cover. Rest in riparian willow, alder, and other shrub thickets. Forages in low canopy or in understory.	April - Aug Breeding			X	X	50ft
Western Tanager <i>Piranga ludoviciana</i>	Nest usually built near distal end of a large branch of a conifer, sometimes in a smaller deciduous tree. Rest in trees and shrubs. Forage by gleaning or plucking insects from tree foliage.	May - Aug Breeding			X		50ft
Black-headed Grosbeak <i>Pheucticus melanocephalus</i>	Builds nest in a shrub or tree, often beside stream or other water. Rest in trees and shrubs. Forage in deciduous trees.	April - Aug Breeding			X	X	50ft
Lazuli Bunting <i>Paaerina amoena</i>	Builds nest in dense thicket of shrubs, vines, low trees, or tall forbs near water. Rests in trees and shrubs and herbage. Forage in or beneath tall, dense herbaceous vegetation, shrubs, low tree foliage, and vine tangles.	April - Aug Breeding			X		50ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Spotted Towhee <i>Pipilo maculatus</i>	Nest usually built in a depression formed on ground, concealed by surrounding vegetation. Rest in shrubs, ground herbage, and thickets with abundant leaf litter in a variety of habitats. Usually forages beneath overhanging vegetation of shrubs or thickets	April - August Breeding			X		50ft
California Towhee <i>Pipilo crissalis</i>	Nest is a bulky cup of thin twigs concealed in low, dense foliage of a shrub or tree. Shrubs in broken chaparral, margins of dense chaparral, willow thickets, and brushy understory of open wooded habitats provide resting habitat. Prefers to forage on open ground adjacent to brushy cover.	April - Aug Breeding			X	X	50ft
Chipping Sparrow <i>Spizella passerina</i>	Nest in a conifer, but deciduous tree or shrub is also used. Nest usually concealed in dense foliage near end of branch. Rest and forages in open woodland with sparse or low herbaceous cover and a low density of shrub.	April - Aug Breeding			X	X	50ft
Savannah Sparrow <i>Passerculus sandwichensis</i>	Nest, rest, and forage in dense, moist grasslands, and wet meadows habitats.	April - July Breeding			X	X	50ft
Fox Sparrow <i>Passerella iliaca</i>	Nests on ground in low, dense foliage of a shrub or riparian thicket. Rests in dense chaparral and a variety of wooded habitats. Forages beneath dense brush by scratching vigorously in litter and duff.	Sept - April			X		
Song Sparrow <i>Melospiza melodia</i>	Nest and rest in dense riparian thickets, emergent wetlands, or dense thickets in other moist situations. Forages regularly along the coast for crustaceans and mollusks. Also forages on ground in low vegetation, dense thickets, or wetlands vegetation.	Feb - August Breeding			X	X	50ft



Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season*	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Lincoln's Sparrow <i>Melospiza lincolnii</i>	Nest on the ground in wet meadows with willow thickets. Rest in thickets of willow, other shrub, and tall herbs. Forage in low plants, dense cover such as willow thickets.	Sept - April			X	X	
Golden-crowned Sparrow <i>Zonotrichia atricapilla</i>	Nest in Canada and Alaska in thickets of willow, alder, birch, or other dense shrubs. Rest in shrubs. Forage on buds, seedlings, flowers, and seeds of grasses and forbs.	Sept - April			X	X	
White-crowned Sparrow <i>Zonotrichia leucophrys</i>	Nest and rest in open coastal scrub and willow thickets, and in montane meadows and along water courses with willow, other shrubs, lodgepole pines, and other conifers. Forage on bare ground or grassy areas near cover of shrubs.	May - Sept Breeding			X	X	50ft
Dark-eyed Junco <i>Junco hyemalis</i>	Nest on the ground near shrub or small tree, often near water. Rest and forage in trees, shrubs, and ground herbage.	April - Aug Breeding			X	X	50ft
Red-winged Blackbird <i>Agelaius phoeniceus</i>	Nest usually built over or near water in dense emergent wetland of cattails, tules, sedges, or in moist habitat. Rest in fresh or brackish emergent wetlands; also uses trees, shrubs, or dense vegetation. Forage in wetland and other moist, and open habitats.	March - July Breeding			X	X	50ft
Western Meadowlark <i>Sturnella neglecta</i>	Nest hidden in depression in ground among grasses and forbs. Rests and forages in dense, grassy vegetation tall enough for concealment. Forages	Feb - Aug Breeding			X	X	50ft

Species	Habitat Requirements (nesting, resting, breeding, feeding)	Season	Habitat Used*				
			Tidal	Bluff	Upland	Aquatic	Buffer*
Brewer's Blackbird <i>Euphagus cyanocephalus</i>	Nests in meadow, grassland, cropland, urban habitats, margins of lakes and streams. Rest on transmission lines and poles. Dense foliage of trees and shrubs, and emergent vegetation. Forages from ground or low vegetation in open meadows, grassland, croplands, beaches, shores of rivers and lakes.	March - Aug Breeding			X	X	50ft
Northern Oriole <i>Icterus galbula</i>	Nest in open stands of large, preferably deciduous, and trees. Rest in trees, particularly riparian deciduous species and deciduous oaks. Forage in shrubs and herbaceous vegetation.	April - July Egg			X	X	50ft
Purple Finch <i>Carpodacus purpureus</i>	Nest and rest near end of a horizontal branch in a conifer, usually near edge of a forest opening and near water. Forage in chaparral, grasslands, and meadows.	April - July Breeding			X	X	50ft
House Finch <i>Carpodacus mexicanus</i>	Nest and rest in a variety of sites, usually shaded overhead; in dense foliage of tree, tall shrub or vine, and human-made structures. Forage on ground or pick seeds and fruits from plants while clinging to stems or branches.	Feb - August Breeding			X	X	50ft
Lesser Goldfinch <i>Carduelis psaltria</i>	Nests and rest in deciduous shrub or tree. Forage on thistles, other composites, and shrubs, plucking seeds directly from the plants.	April - August			X		50ft
American Goldfinch <i>Carduelis tristis</i>	Nest in willow, cottonwood, or other riparian deciduous tree, usually near water. Rest by trees, shrubs, tall herbs. Forage on the ground.	April - July Breeding			X	X	50ft



**Above:** Coastal bluff with roosting cormorants.

**Below:** Sea stack offshore with cormorants and harbor seals.

Photographs taken December 29, 2005.

